

**Adrian Liston**

BSc(Hons) GCertHE MPH PhD FMedSci FRSB

- **Positions**

2020 – current Senior Research Fellow, Churchill College, University of Cambridge, United Kingdom  
 2019 – current Senior Group Leader, The Babraham Institute, United Kingdom  
 2019 – 2022 Professor (part-time), Department of Microbiology & Immunology, University of Leuven, Belgium  
 2021 – current Deputy Editor, Immunology and Cell Biology  
 2021 – current Director, Aila Biotech

- **Previous positions**

2009 – 2021 Group Leader, VIB Brain and Disease Research Center, Belgium  
 2009 – 2018 Professor, Department of Microbiology & Immunology, University of Leuven, Belgium  
 2006 – 2008 Senior Fellow. Mentor: Sasha Rudensky. University of Washington, USA  
 2005 – 2006 Post-doctoral fellow. Mentor: Chris Goodnow. Australian National University, Australia

- **Education**

2009 Master of Public Health, University of Queensland, Australia  
 2006 Graduate Certificate in Higher Education, Australian National University, Australia  
 2005 PhD. Australian National University, Australia  
 2001 Honours, Adelaide University, Australia  
 2000 BSc (Biomedical Sciences), Adelaide University, Australia

- **Selected Fellowships and Awards**

2022 Fellow of the Royal Society of Biology  
 2021 Fellow of the Academy of Medical Sciences  
 2020 Wellcome Trust Investigator  
 2020 Senior Research Fellowship, Churchill College, UK  
 2020 ERC Proof-of-Concept Award winner, EU  
 2018 Eijkman Lecture, Utrecht University, Netherlands  
 2017 Guy Newton Fellow, Oxford University, UK  
 2017 Derrick Rowley Lecture, Australia  
 2016 Eppendorf Award for Young European Investigators  
 2016 ERC Consolidator Award winner, EU  
 2016 Francqui Foundation Chair, Université libre de Bruxelles, Belgium  
 2015 Landsteiner Lecture, Sanquin  
 2015 Dr. Karel-Lodewijk Prize, Belgian Royal Academy of Medicine, Belgium  
 2010 ERC Start Grant Award winner, EU  
 2010 JDRF Career Development Award, USA  
 2007 – 2008 CJ Martin Fellowship – NHMRC, Australia  
 2006 – 2007 Abbott Research Fellow – Irvington Institute, USA  
 2006 RJ Menzies Leadership Award – NHMRC, Australia  
 2005 The Frank Fenner Medal – John Curtin School of Medicine, Australia  
 2005 New Investigator Prize – Australian Society for Medical Research, Australia  
 2003 New Investigator Prize – Nature Immunology  
 2003 Science Communication Award – Australasian Society for Immunology  
 2003 New Investigator Prize – Australasian Society for Immunology  
 2002 – 2005 Fenner Merit Scholarship – Australian National University, Australia  
 2001 University Medal – Adelaide University, Australia

## • **Supervision and mentoring**

### Current supervision at the Babraham Institute, UK

Nine post-doctoral fellows under my direct supervision

Three PhD students under my direct supervision

### Current supervision at the University of Leuven, Belgium (during transition period)

Three PhD students under my joint supervision (scheduled completion in 2022)

### Past supervision

- 2019 – current Six post-doctoral fellows completed training under my direct supervision (Babraham Institute, UK)
- 2019 – current One Masters student completed training under my direct supervision (Babraham Institute, UK)
- 2009 – 2021 19 PhD students finished their degree under my supervision, 10 as promoter and 9 as copromoter (University of Leuven, Belgium)
- 2009 – 2021 15 post-doctoral fellows completed training under my direct supervision (University of Leuven, Belgium)
- 2012 – 2019 25 students completed Masters degrees under my direct supervision (University of Leuven, Belgium)
- 2006 – 2008 Supervision of two undergraduate research students (University of Washington, USA)
- 2005 One student completed an Honours degree under my joint supervision (Australian National University, Australia)

### Mentoring

Mentor for junior faculty through the Academy of Medical Sciences mentoring program

Mentor for PhD students and post-docs through the Churchill College mentoring program

Member of the MRC Training and Careers group

Informal mentoring of external early career researchers (Alerie de la Fuente, Yassin Elfaki, Caroline Bonner)

Extensive and successful mentoring of PhD students and post-doctoral researchers in my program (for example, see “notable alumni” below)

### Notable alumni

Stephanie Humblet-Baron (postdoc 2010-2019, now Associate Professor at University of Leuven)

Susan Schlenner (postdoc 2012-2017, now Professor at University of Leuven)

Dean Franckaert (PhD 2012-2017, now Director at CellCarta)

Annemarie van Nieuwenhuijze (postdoc 2013-2016, now Head of Biology at Confo Therapeutics)

Carlos Roca (postdoc 2017-2020, now Associate Director of Bioinformatics Data Science at AstraZeneca)

Lidia Yshii (postdoc 2019-2021, now Associate Professor at University of Leuven)

Kailash Singh (postdoc 2019-2021, now Associate Professor at University of Uppsala)

## • **Institutional responsibilities**

2021 – current COVID Ramp-Up Committee at the Babraham Institute

2021 – current Acting Head of the Human Ethics Committee

2020 – current Executive Committee at the Babraham Institute

2020 – current Committee member of Knowledge Exchange and Commercialisation at the Babraham Institute

2020 Co-Chair of COVID Diagnostics Committee at the Babraham Institute

2019 – current Green Labs Committee at the Babraham Institute

2019 – current Science Policy Committee at the Babraham Institute

2017 – 2018 Founder and Director of University of Leuven MutaMouse (CrispR) Facility

2016 – 2018 Board member for Belgian Immunology Society

2015 – 2018 Co-Founder and council member of “Fonds Pediatrische Immuun-inflammatoire Aandoeningen”, a University of Leuven charitable fund supporting research in paediatric autoinflammatory diseases

- 2015 – 2016 Member of the Management Committee, VIB  
 2013 – 2018 Member of the Departmental Board, Department of Microbiology & Immunology, University of Leuven  
 2010 – 2018 Founder and Director of University of Leuven FACS Core Facility  
 2009 – 2021 Faculty member, University of Leuven

#### • Selected Commissions of Trust

- Ongoing Ad hoc reviewing for multiple international journals and funding agencies  
 From 2023 Editor-in-Chief, Immunology & Cell Biology  
 2022 – current Member of MRC Training and Careers group  
 2022 – current Member of MRC Ageing Research Steering Group.  
 2021 Review Board, Medical Research Foundation  
 2021 Review Board, BBSRC Health strategic challenge area  
 2020 – current Review Board Chair, Academy of Finland  
 2020 – current Panel member for MRC Infection and Immunity board  
 2020 Panel member for Wellcome Expert Review group  
 2017 Lead organiser for Belgium Immunology Society Annual Meeting  
 2015 – 2020 Review Board, Academy of Finland  
 2015 Scientific Organisation Committee “Emerging cytokine networks”, Gent  
 2015 – 2017 Editor, Scientific Reports  
 2014 – 2016 Review Board, Fonds de la Recherche Scientifique (Belgium)  
 2012 – 2016 Founding Deputy Editor, Clinical & Translational Immunology  
 2011 – 2018 Deputy Editor, Immunology & Cell Biology  
 2010 Founding Editorial Board member, Frontiers in Immunological Tolerance  
 2009 – 2010 Editorial Board, Immunology & Cell Biology  
 2009 – 2011 Review Board, Research Council of Norway

#### • Membership of Scientific Societies

- 2020 – current Member, British Society for Immunology, UK  
 2017 – current Founding member, EFIS-IL Study Group “T cell connect”, EU  
 2015 – 2018 Member, European Association for the Study of Diabetes, EU  
 2014 – 2018 Member, European Society for Immunodeficiencies, EU  
 2009 – 2018 Member, Belgian Society of Immunology, Belgium  
 2002 – 2009 Member, Australasian Society for Immunology, Australia  
 2003 – 2006 Member, National Institute for Bioscience, Australia  
 2003 – 2006 Member, National Institute for Human and Human Science, Australia  
 2002 – 2006 Member, Australian Society of Medical Research, Australia

#### Translational research

Founder and Director of Aila Biotech Ltd, a spin-off in development from the Babraham Institute  
 Scientific Advisory Board for Imcyse (2021-current) and Sangamo (2021-current)  
 Consultant (2020-2022) for Sofinnova, Immune Regulation, GSK, Phoremest  
 Clinical trial lead:

- Immunophenotyping in Alzheimer’s Disease (S60733, UZ Leuven). PI: Liston
- Understanding the genomic basis of immunological disorders (S52653, UZ Leuven). PI: Liston

Coordinating immunologist on the following clinical trials:

- CONTAGIOUS consortium for COVID-19 research (S63881, UZ Leuven). PI: Wauters (ongoing)
- Prospective research to the pathophysiological mechanisms underlying post-infectious irritable bowel syndrome (S51501, UZ Leuven). PI: Boeckxstaens
- Peripheral H1-antagonists as treatment for irritable bowel syndrome (S51638, UZ Leuven). PI: Boeckxstaens
- Genetic research in multiple sclerosis (ML4733, UZ Leuven). PI: Dubois
- Immunological interaction between the host and Candida biofilms (S58231, UZ Leuven). PI: Lagou

Co-chair for Translational Research:

- STIMULI, a randomised open-label phase II trial of consolidation ipilimumab in limited-stage SCLC after chemo-radiotherapy (2014-2019)

## Patents and commercialisation

- Inventor on GB2103327.9. ‘Novel method for lung-specific regulatory T cell expansion’. 2021
- Inventor on PCT/GB2020/052148. ‘Novel method for brain-specific regulatory T cell expansion’. 2020, with supporting patents GB2118073.2 and GB 2202628.0 (2021).
- Inventor on provisional patent applications BAB-C-P2997GBp and BAB-C-P2999GBp. 2020
- Developer of AutoSpill, a novel approach for flow cytometry compensation, leading to an industrial agreement with BD Biosciences for integration into FlowJo v10.7 (impact >80,000 users)
- Inventor on EP16195675.0 ‘Means and methods to influence the immune response’. 2016
- Inventor on EP14173514.2 ‘Methods for selective cell ablation’. 2015
- Inventor on EP131670416 ‘Mcl-1 as critical regulator of Foxp3+ regulatory T cell survival, and use thereof to treat severe immune disorders’. 2013

## Research support

### *Current support*

- PI Wellcome Trust Investigator, Brain CD4 T cells and their influence over microglial homeostasis, £1,781,917, 2021-2026
- PI MRC-CIHR collaborative award, Systemic analysis of the molecular mechanisms of leukocyte entry into the pancreas, £327,000, 2020-2023
- CoPI Horizon2020, EXIMIOUS, Mapping Exposure-Induced Immune Effects: Connecting the Exposome and the Immunome, total budget, €10.8m, amount awarded to Adrian Liston: €256,000, 2020-2025
- CoPI Horizon2020, Immunome project consortium for Autoinflammatory disorders, total budget, €15.8m, amount awarded to Adrian Liston: €655,000, 2018-2024

### *Selected previous support*

- PI ERC Consolidator Award, Tissue-Tregs, Novel approaches to determining the function of tissue-specific regulatory T cells, €2m, 2016-2021
- PI Alzheimer's Association Research Grant, Role of regulatory T cells in Alzheimer's disease, US\$108,000, 2018-2020
- PI Hercules Foundation, Development of a technology platform for next-generation cytometry, €1.9m, 2016
- PI Hercules Foundation, Foundation of a FACS Core, €526,411, 2010
- PI JDRF Early Career Award, The contribution of non-hematopoietic defects to autoimmune diabetes, US\$600,000, 2011-2016
- PI ERC Start Grant, Immunogenomics: Mouse to Human Translational Research, €1.5m, 2010-2015

## Selected invited presentations

- AAI, US (2022)
- Global ImmunoTalks (2022)
- Seminar, Karolinska Institute (2021)
- Seminar, Fred Hutchinson (2021)
- 3<sup>rd</sup> Midwinter Conference Seefeld (2019)
- FEBS Summer School (2019)
- Gordon Conference (2018)
- Eijkman seminar, Utrecht (2018)
- Australasian Society of Immunology visiting speaker program (2017, Australia and New Zealand)
- Leaders in Science Seminar, Garvin Institute (2017)
- Derrick Rowley Lecture, Adelaide University (2017)
- Francqui lecture series, Université libre de Bruxelles (2016)
- Landsteiner Lecture, Sanquin (2015)
- Seminar, Oxford University (2015)
- Basel Immunology Focus Symposium (2015)
- Seminar, Cambridge University (2014)
- DFKZ Tumour Immunology (2013)
- Japanese Society of Immunology (2013)
- Seminar, Oxford University (2012)
- Indian National Conference on Primary Immunodeficiency (2012)
- Pediatric Rheumatology European Society Congress (2011)

## Public engagement

- Developer of “Virus Fighter”, a web-based virus outbreak simulator that educates the public about vaccination, herd immunity and social distancing: <https://www.virusfighter.org/> VirusFighter won the 2021 Babraham Institute Public Engagement Award and was nominated for the Cambridge Independent “STEM Initiative of the Year” in 2022
- Author of children’s book “Just for Kids! All about Coronavirus”. Translated into 6 languages and read by >5000 children
- Author of children’s book “Battle Robots of the Blood”. Translated into 12 languages
- Author of children’s book “Maya’s Marvellous Medicine”. Translated into 3 languages
- Running a series “Coronavirus science simplified” on Twitter, where cutting-edge papers are presented as illustrated abstract to explain the science to the public
- Author of a science blog (<http://www.liston.babraham.ac.uk/>) for the last 10+ years, focusing on science communication and science careers, with ~1000 views/month
- Numerous press releases and interviews with journalists, leading to extensive newspaper and TV news features of our research, at a national and international level

## Publications

I have published >200 scientific articles, including corresponding authorships in high profile journals such as *Cell*, *Nature Immunology*, *Nature Medicine*, *Nature Genetics*, *Nature Communications*, *Nature Reviews Immunology*, *Immunity*, *Science Immunology*, *Journal of Experimental Medicine* and *Science Translational Medicine*. These articles have led to >14,000 citations (H-factor 55).

### Key publications

Yshii, Pasciuto, Bielefeld, Mascali, Lemaitre, Marino, Dooley, Kouser, Verschoren, Lagou, Kempes, Gervois, de Boer, Burton, Wahis, Verhaert, Tareen, Roca, Singh, Whyte, Kerstens, Callaerts-Vegh, Poovathingal, Prezzemolo, Wierda, Dashwood, Xie, Van Wonterghem, Creemers, Aloulou, Gsell, Abiega, Munck, Vandenbroucke, Bronckaers, Lemmens, De Strooper, Van Den Bosch, Himmelreich, Fitzsimons, Holt\* and Liston\*. ‘Astrocyte-targeted gene delivery of interleukin 2 specifically increases brain-resident regulatory T cell numbers and protects against pathological neuroinflammation’. *Nature Immunology*. 2022. **In Press**. (IF=25.6)

Whyte, Singh, Burton, Aloulou, Kouser, Veiga, Dashwood, Okkenhaug, Benadda, Moudra, Bricard, Lienart, Bielefeld, Roca, Naranjo, Lombard-Vadnais, Junius, Bending, Hochepped, Halim, Schlenner, Lesage, Dooley\* and Liston\*. Context-dependent effects of IL-2 rewire immunity into distinct cellular circuits. 2022. *Journal of Experimental Medicine*. **In Press**. (IF=14.31)

Liston, Humblet-Baron, Duffy and Goris. ‘Human immune diversity: from evolution to modernity’. *Nature Immunology*. 2021. 22(12):1479. (IF=25.6)

Roca, Burton, Gergelits, Prezzemolo, Whyte, Halpert, Kreft, Collier, Botzki, Spidlen, Humblet-Baron and Liston. ‘AutoSpill is a principled framework that simplifies the analysis of multichromatic flow cytometry data.’ 2021. *Nature Communications*. 12(1):2890. (IF=14.92)

Junius, Mavrogiannis, Lemaitre, Gerbaux, Staels, Malviya, Burton, Gergelits, Singh, Tito Tadeo, Raes, Humblet-Baron, Liston\* and Schlenner\*. ‘Unstable regulatory T cells, enriched for naïve and Nrp1neg cells, are purged after fate challenge.’ 2021. *Science Immunology*. 6(61):eabe4723. (IF=17.73)

Pasciuto, Burton, Roca, Lagou, Rajan, Theys, Mancuso, Tito, Kouser, Callaerts-Vegh, de la Fuente, Prezzemolo, Mascali, Brajic, Whyte, Yshii, Martinex-Muriana, Naughton, Young, Moudra, Lemaitre,

Poovathingal, Raes, De Strooper, Fitzgerald, Dooley and Liston. 'Microglia require CD4 T cells to complete the fetal to adult transition'. 2020. *Cell*. 182(3) p625. (IF=41.58, 79 citations)

Liston and Masters. 'Homeostasis-altering molecular processes as mechanisms of inflammasome activation'. *Nature Reviews Immunology*. 2017. 17(3) p208. (IF=53.11, 244 citations)

Carr, Dooley, Garcia-Perez, Lagou, Lee, Wouters, Meyts, Goris, Boeckxstaens, Linterman and Liston. 'The cellular composition of the human immune system is shaped by age and cohabitation'. *Nature Immunology*. 2016. 17(4) p461. (IF=25.6, 236 citations)

Dooley, Tian, Schonefeldt, Delghingaro-Augusto, Garcia-Perez, Pascuito, Di Marino, Carr, Oskolkov, Lyssenko, Franckaert, Lagou, Overbergh, Vandenbussche, Allemeersch, Chabot-Roy, Dahlstrom, Laybutt, Petrovsky, Socha, Gevaert, Jetten, Lambrechts, Linterman, Goodnow, Nolan, Lesage, Schlenner and Liston. 'Genetic predisposition for beta cell fragility underlies type 1 and type 2 diabetes'. *Nature Genetics*. 2016. 48(5) p519. (IF=38.33, 115 citations)

Masters, Lagou, Jeru, Baker, Van Eyck, Parry, Lawless, De Nardo, Garcia-Perez, Dagley, Holley, Dooley, Moghaddas, Pascuito, Jeandel, Sciot, Lyras, Webb, Nicholson, De Somer, van Nieuwenhove, Ruuth-Praz, Copin, Cochet, Medlej-Hashim, Megarbane, Schroder, Savic, Goris, Amselem, Wouters and Liston. 'Familial autoinflammation with neutrophilic dermatosis reveals a regulatory mechanism of pyrin activation.' *Science Translational Medicine*. 2016. 8(332) p45. (IF=17.99, 235 citations)

Liston and Gray. 'Homeostatic control of regulatory T cell diversity'. 2014. *Nature Reviews Immunology*. 14(3):154. (IF=53.11, 405 citations)

Pierson, Cauwe, Policheni, Schlenner, Franckaert, Berges, Humblet-Baron, Schonefeldt, Herold, Hildeman, Strasser, Bouillet, Lu, Matthys, Freitas, Luther, Weaver, Dooley, Gray and Liston. 'Anti-apoptotic Mcl-1 is critical for the survival and niche-filling capacity of Foxp3<sup>+</sup> regulatory T cells.' 2013. *Nature Immunology*. 14(9) p959. (IF=25.6, 213 citations)

Papadopoulou, Dooley, Linterman, Pierson, Ucar, Kyewski, Zuklys, Hollander, Matthys, Gray, De Strooper and Liston. 'The thymic epithelial microRNA network elevates the threshold for infection-associated thymic involution via miR-29a mediated suppression of the IFN- $\alpha$  receptor.' 2012. *Nature Immunology*. 13 p181. (IF=25.6, 170 citations)

Linterman, Pierson, Lee, Kallies, Kawamoto, Rayner, Srivastava, Divekar, Beaton, Hogan, Fagarasan, Liston\*, Smith\* and Vinuesa\*. \*Co-last. 'Follicular regulatory T cells develop from FoxP3<sup>+</sup> T cells and control T follicular helper cells and the germinal center response'. 2011. *Nature Medicine*. 17(8) p975. (IF=53.44, 1122 citations)

Liston, Enders and Siggs. 'Unravelling the clinical association of partial T-cell immunodeficiency and immune dysregulation with mouse models' 2008. *Nature Reviews Immunology*. 8(7) p545. (IF=53.11, 141 citations)

Siggs, Miosge, Yates, Kuchsarka, Sheahan, Brdicka, Weiss, Liston\* and Goodnow\*. 'Opposing functions of Zap70 for immunity and tolerance titrate differentially in response to inherited single nucleotide substitutions'. 2007. *Immunity*. 27(6) p912. \*equal contribution senior authors. (IF=31.74, 139 citations)

Liston, Lesage, Gray, O'Reilly, Strasser, Fahrner, Boyd, Wilson, Baxter, Gallo, Crabtree, Peng, Wilson and Goodnow. 'Generalised resistance to thymic deletion in the NOD mouse: a polygenic trait characterized by defective induction of Bim'. 2004. *Immunity* 21(6) p817. (IF=31.74, 195 citations)

Liston, Lesage, Wilson, Peltonen and Goodnow. 'Aire regulates negative selection of organ-specific T cells' 2003. *Nature Immunology* 4(4) p350. (IF=25.6, 899 citations)